

BOARD OF INSPECTION AND SURVEY

Notes for the Undersea Warfare Officer

1. General Overview.

- A. INSURV will conduct a comprehensive material inspection of your ship. The information in this handout will assist you in presenting USW equipment to the board.
- B. Your inspection team will consist of uniformed members of the Board of Inspection & Survey and civilian inspectors on temporary duty with the Board. Each functional area with the USW area (hull-mounted sonar, towed array sonar, UBFC, torpedo tubes, fathometer, etc.) will normally have one or more inspectors assigned.
- C. Four to six weeks prior to the inspection, you will receive the Combat Systems Demonstration Test Package (CSDTP) from NWAD, Corona, CA. While not a true test plan, the CSDTP is a functional document that includes ship-specific equipment and tests (generally PMS) to be conducted. Except as noted below, these tests will be conducted during the inspection, and completion of these tests is not expected prior to INSURV's arrival. However, rehearsal of the tests prior to the inspection will significantly improve how smoothly the inspection proceeds, and will help identify discrepancies that require correction or documentation. Note: if installed equipment is inadvertently left off the CSDTP, that equipment will still be thoroughly inspected, so plan accordingly.
- D. The following USW suite tests should be accomplished prior to the inspection (up to 30 days prior, and 60 days prior for dome dives) due to the limited time available during the actual inspection:
 - 1) Sonar self noise.
 - 2) Sonar receiver sensitivity and source levels (FTSC assist recommended)(FTSC LANT ltr Ser 4335/6776 of 10 Jun 01, or the most recent SFR, applies).
 - 3) Sonar dome dive (FTSC assist required). Dome dives can be arranged through your servicing FTSC detachment.

2. Conduct of the Inspection.

- A. The inspection will focus solely on the material condition of the ship and installed equipment. Watchstander proficiency, administrative programs, etc., are not evaluated. However, completion of the inspection in the limited time available (2.5 days) requires that the ship execute the agenda smartly.
- B. No live ordnance will be used during demonstrations. SVTT demonstrations will be conducted with air slugs – ship's force is responsible for all required safety preparations and announcements. The ship should be prepared for manual and remote firing of air slugs on Day 1, and for remote firing of air slugs on Day 2. VLA shots will be conducted with the MK116 in training mode using a simulated inventory.
- C. Inspectors and technical assistants will not operate your equipment. Ship's force will perform all demonstrations. Inspectors/technical assistance may not be used to meet any two-man rule requirements.
- D. There are no hidden agendas. PMS is the primary inspection criteria, followed by NSTMs, technical manuals, technical/safety bulletins, ordnance publications and ship's drawings.
- E. INSURV is a snapshot in time of the ship's condition. Deficiencies that exist at any time during the inspection will be documented. If a deficiency is corrected, and time permits, the inspector will reinspect the equipment and annotate the deficiency as "corrected". Ship's force troubleshooting and repair of equipment deficiencies will be performed after the inspector has completed his/her inspection of that equipment. At no time will the inspection be hampered by repair efforts. However, if inoperative equipment will adversely affect the USW OPDEMO, the civilian technical inspector will generally provide troubleshooting assistance to correct the problem, on a case basis and as time permits.
- F. Ensure all technical assistance is complete or suspended prior to the start of the inspection. Unless specifically arranged prior to starting the inspection, no outside work or technical assistance is allowed during the INSURV inspection. Options for repair of equipment that is totally inoperative and affects the conduct of specific demonstrations such as the USW OPDEMO will be discussed on a case basis.
- G. All equipment and personnel safety devices and features such as electrical interlocks and cooling water flow switches are expected to be fully operational and will be demonstrated. If a safety device or feature has been defeated by whatever means (jumpered, removed, etc.), the equipment or system served will be

considered inoperative. The equipment/system will be considered operational when the safety device has been correctly repaired and satisfactorily tested.

3. General Notes:

- A. A Combat system brief of the AAW Detect to Engage (DTE) and USW Opdemo is desired immediately following the INSURV arrival brief on Day 1. This ensures that INSURV inspectors and ship's company are in agreement on procedures and SOE, and provides ship's company time to make any adjustments recommended by INSURV. DTE/Opdemo descriptions, grading criteria, and recommended scenarios are contained in the applicable INSURV instructions. INSURV's primary interest is equipment performance, not watchstander proficiency or tactics. However, ships are encouraged to station their most proficient watch teams to ensure a successful demonstration. Ship's CO attendance at the brief is not required.
- B. OCSOT will not be observed by the INSURV team. It is strongly recommended that an OCSOT be conducted by the ship after all combat systems testing is completed on Day 1 to ensure systems operation and settings are correct.

4. Ordnance Handling Equipment:

- A. Torpedo handling equipment such as slings booms, dollies, hand-lift trucks, etc., will be inspected by either the civilian technical assistant or the uniformed inspector. Items that require long set-up times (over-the-side handling booms, torpedo magazine monorails, etc., should be rigged for inspection prior to INSURV's arrival on Day 1. All items of handling equipment must have appropriate weight test/safety certification data available (tags or documentation).
- B. Magazines will be inspected IAW the requirements of OP 4 and NAVSEA S9522-AA-HBK-010. Tests of the sprinkler and alarm systems will be IAW the applicable MRC. INSURV Weapons inspectors will observe the actual tests. Coordinate with your Ordnance/Gunnery officer to determine when your magazines will be inspected.

5. Documentation:

- A. INSURV inspectors will review the ship's CSMP to evaluate its validity and quality. This is accomplished by a comparison of major deficiencies discovered during the inspection with those deficiencies already documented in the CSMP. Inspectors will make every effort to ensure that items already documented in the CSMP are noted with work center JSNs in the deficiency remarks to help reduce duplication. It is greatly beneficial for ship's personnel to diligently document known deficiencies in preparation for the inspection. PMS accomplishment is not directly reviewed during the inspection, however, any deficiency that results from obvious non-accomplishment of required PMS will be so noted.
- B. Currently, INSURV funds conversion of all deficiencies into 2Ks for addition to the ship's CSMP via an outside contractor. Ship's force will need to work closely with the contractor to ensure that any additional information required is provided to the contractor, and that corrected deficiencies are passed to history files vice inclusion in the CSMP.
- C. Inspectors will also review the Combat Systems Smooth Log for documentation of routine material inspections and required system tests. These include but are not limited to: Sonar source level and receiver sensitivity checks, self-noise level results, SSRNM range reports, WQM-8 results, Dome inspection results, MHE weight test documentation, Torpedo Tube inspection results, alignment reports, etc. Additionally, authorization documents for equipment in TYCOM-approved IEM will be reviewed.

6. USW OPDEMO

- A. A USW Opdemo will be conducted to demonstrate the operation and interfaces of all major items of ASW equipment. Thoroughly review INSURVINST 4730.22 (Standards for Surface ship Anti-submarine (USW) Demonstration) for details on conduct of the demonstration. INSURV inspectors will observe the USW Opdemo from critical control stations, both within Sonar Control and from the USW plot on the DRT/NC2. Your regular USW watch team should be utilized and the normal flow of information between control stations should be used. Opdemo tips include (they sound trivial, but are based in actual observations):

- 1) Use your best sonar watchstanders and DRT plotting teams. This is no time for a training evolution.

- 2) Rehearse the scenario with the watch team that will conduct the event. Ensure all hands know how to configure their console to interface with the sonar gear (including ASTAC, ASWE, etc.) - the interfaces are part of the demo.
- 3) Provide as much plotting information as possible to the DRT/NC2/DDRT team, including a copy of the EMATT run profile before starting the event.
- 4) Keep the scenario simple and easy to execute - we don't grade tactics. The whole idea is to show that the equipment will detect the target, pass the data to the UBFC and all required consoles, and engage.
- 5) Move quickly to prosecute the EMATT - they have a habit of dying just as you are lining up for the shot. Don't get tied up in positioning the ship for a specific shot geometry - shift modes (Snake/no-runout) as required and move on. Keep an extra EMATT on station ready to launch in case the first fails to start or ceases to operate.
- 6) For VLA-capable ships: Shoot the SVTT first, then shift the CND and MK 116 to test/training mode for a simulated VLA shot. Make sure your team has practiced this shift.
- 7) Opdemo grading will be based on a weighted average of all equipment performances. ASW countermeasures (NIXIE and Prairie Masker) are considered part of the demo and their performance will be included in grading.

B. Since this is a material inspection, operator errors (such as an incorrect VAB action prior to firing) are not penalized, IF immediately brought to the inspector's attention. Generally we can extend the scenario to try again. Waiting until the demo is over to highlight the problem is too late.

7. Reporting of Deficiencies

- A. Deficiencies will be categorized as a part 1 (major), part 2 (minor), or part 3 (pass to history or simply an INSURV data point for the database). These categories are indicated by the first digit of the INSURV deficiency number (1G, 2G, 3G, etc.).
- B. Addition special classifications will be included as required and indicated by a suffix to the INSURV number. These include 1) Mission Degrading - a deficiency that causes more than a 70% loss of a Required Operational Capability (ROC) for your class of ship ("U" suffix); and 2) Safety - a deficiency that could result in hazards to personnel or equipment damage ("S" suffix).
- C. Any deficiency existing on the first day of the inspection will be noted. If the deficiency is corrected during the first 2.5 days of the inspection, the deficiency will be noted as "corrected", but will still count towards the final grades tabulated for the INSURV.
- D. All deficiencies, including those marked as corrected, will be provided in an advance report to the cognizant department head by the respective inspectors, and in the final report the Board issues at a later date. The inspection quicklook message, transmitted the last day of the inspection, will list mission-degrading deficiencies, major safety deficiencies and part one deficiencies deemed appropriate.
- E. Most deficiencies that are also documented on the CSMP or in CASREP reporting will be annotated with the workcenter JSN or CASREP number.
- F. INSURV contracts with a private firm to convert all deficiencies to 2K/CSMP entries. This process usually begins within three weeks after the completion of the inspection. This is NOT a hands-off process for the ship, and full participation by the 3M Coordinator and Work Center supervisors is required to ensure correct information is included in 2K entries and to achieve a quality product for the ship.